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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,252	01/23/2004	Yang Wang		8020

7590 07/11/2005  
YANG WANG  
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WESTFORD, MA 01886

EXAMINER

VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/764,252	Applicant(s) WANG, YANG	
	Examiner David A. Vanore	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,29,30,33,34,37,38,41-44,47-52,61,64 and 68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,7,43,44,47,48,50,51 and 61 is/are allowed.
- 6) ☒ Claim(s) 1,4,5,29,30,33,34,37,38,41,42,49,52,64, and 68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed May 11, 2005 have been fully considered but they are not persuasive.

Applicant has argued that the 35 USC 112 and 35 USC 101 rejection of claims 29, 30, 33-34, 37-38, 41-42, 49, and 52 is improper and argues the point using a "product by process" rationale recited in the MPEP at section 2173.05(f). The arguments presented by the Applicant would be correct if the claims recited product by process limitations. However, as previously set forth, the rejected claims recite a device and method of use and stand properly rejected in light of the Ex parte Lyell decision set forth in the previous Office action. Therefore, Applicant's arguments at pages 10-12 of the response are not persuasive.

Applicant has further argued with regards to claims 1, 4, 5, and 64 that not all the claimed elements are taught by the reference. Specifically, the Applicant has misconstrued the reasons for allowance set forth by the examiner in the previous Office action. The examiner never stated that the term "electrostatic" conferred patentability on any of the claims or limitations contained therein. The Applicant has broadened an interpretation of the reasons for allowance previously set forth to argue limitations not presented in the claims at issue. There is no mention in claims 1, 4, 5, and 64 of "non-linear resonance" or an "RF field." The Applicant's arguments with regards to claims 1, 4, 5, and 64 are therefore moot as they address limitations not present in the claims at issue and furthermore rely on misapplied interpretation of what the examiner has set

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forth as being patentable. Note the Reasons for Allowance section of the previous Office action mailed on April 5, 2005.

The Examiner thanks the Applicant for canceling claims 59-60 in order to expedite prosecution.

In summation, the arguments presented by the Applicant are not persuasive and the previously rejected claims, save canceled claims 59-60 stand finally rejected.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29, 30, 33, 34, 37, 38, 41, 42, 49, and 52 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 29, 30, 33, 34, 37, 38, 41, 42, 49, and 52 recite method steps directed to a method of using the apparatus claim on which they depend. Note the relevant teaching from the MPEP regarding *Ex parte Lyell* cited below.

A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. In *Ex parte Lyell*, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990), a claim directed to an automatic transmission workstand and the method steps of using it was held to be ambiguous and properly rejected under 35 U.S.C. 112, second paragraph.

Such claims should also be rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 29, 30, 33, 34, 37, 38, 41, 42, 49, and 52 stand rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As pointed out above, claims 29, 30, 33, 34, 37, 38, 41, 42, 49, and 52 recite both an apparatus and the method steps for using said apparatus and therefore overlap two statutory classes of invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 4, 5, and 64 stand rejected and new claim 68 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Franzen et al. (USPN 5,468,958).

Regarding claim 1, Franzen et al. teaches an ion trap comprising a three-dimensional rotationally symmetric ring electrode (Items 3, 4, and 5) and two cap electrodes (Items 1 and 2 and Items 6 and 7) where the cap electrodes comprise a cone

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electrode (Item 2 for example), and a disk electrode (Item 1 for example) where the ring electrodes and cap electrodes generate dipolar, quadrupole, and octopole fields (Col. 3 Lines 59-68). Since the electrodes create the required fields recited in the claim, Franzen et al. satisfies the material requirements of Claim 1.

Regarding claim 4, the cap electrodes are divided into two main parts, denoted by Items 1 and 2. These parts have surfaces corresponding to the conic and spherical surface sections recited in claim 4. For example, the field emitting means of electrode 2 comprises a portion of a spherical surface at a plurality of locations, note the region immediately surrounding the aperture in Item 2 in Fig. 1 at the central axis of the trap and the taper associated with said Item. Secondly, the cap electrodes further comprise a portion having the shape of a conic surface, most notably in Fig. 1 Item 1, where a portion of the electrode sloping towards the aperture, but prior to a "step" on the electrode, has the shape of a conic section. Claim 4 further recites that the "cross sectional surface of the ring electrode consists of a portion of a circle and two straight lines jointed in orthogonal to the circle, the surfaces of the two cap electrodes facing toward the inside of said ion trap." This structure recites a rotationally hyperbolic electrode structure and conforms to the electrode structure featured in Fig. 1 of Franzen et al. Note further Col. 4 Lines 43-55.

Regarding claim 5, Franzen et al. teaches that the cap electrodes are divided into rotationally symmetrical sets of component electrodes (Col. 4 Lines 1-24).

Regarding claim 64, Franzen et al. further teaches an operating means (10) for ion mass analysis.

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Regarding new claim 68, claim 68 is identical to claim 1 save the replacement of the term "means" in claim 1 with the term "circuitry" in claim 68. Since the term means encompasses the term circuitry and the elements for creating the required fields in the Franzen et al. prior art apparatus are in fact electrical circuits, the prior art anticipates the limitations of the newly added claim. Note further the discussion of claim 1 above.

***Allowable Subject Matter***

Claims 3, 7, 43-44, 47-48, 50-51, and 61 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 3, 7, 43-44, 47-48, 50-51, and 61 are allowable for the reasons set forth in the previous Office action and further with respect to claims 3, 7, 43-44, 47-48, and 50-51 because the Applicant has rewritten claims 3 and 7 to be in independent form. Claims 43-44, 47-48, and 50-51 depend on claims 3 and 7 and are therefore allowable by virtue of their dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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